REMARKS

Applicants hereby elect with traverse the claims of Group I (claims 1-9, directed to an isolated polynucleotide of SEQ ID NO:1 encoding a polypeptide of SEQ ID NO:2, and methods of making the polypeptide).

Claims 1-134 are currently pending in the present application. Claims 1-134 are subject to restriction. Claims 31-72, 77-84 and 86-134 stand objected to as purportedly failing to recite proper method steps. Applicants have amended claims 31-72, 77-84, and 86-134 to appear and proper method format. Claims 126 and 132 have been amended to place the claims into product format. New claim 135 recites the product of claim 133, in RNA form rather than DNA form. New claims 136-137 recite the subject matter of claims 136 and 132 in method form with proper method steps recited therein. Thus basis for this new claim, as well as basis for the amended claims, may be found in the claims as filed as well as the specification, especially pages 6-12.

Turning now to the restriction requirement, Applicants respectfully traverse. For the reasons set forth below, Applicants request that the restriction requirement be modified so that the inventions of Groups I-XV will be examined together.

Applicants respectfully note that during review by the International Searching Authority (ISA), the claims of the PCT application did not receive a lack of unity rejection. Because unity of invention was found for the PCT application under PCT Rule 13, Applicants submit that the current restriction requirement is improper.

In Caterpiller Tractor Co. v. Commissioner of Patents and Trademarks, 231 U.S.P.Q. 590, 590-1 (E.D. Va 1986), the Court held that a restriction requirement of claims found to have unity runs afoul of Article 27. Article 27 provides in part:

> (1) No national law shall require compliance with requirements relating to the form or contents of the international application different from or additional to those which are provided for in this Treaty and the Regulations.

Thus, analogous to the facts of Caterpiller, as this application was filed under 35 U.S.C. § 371 and the claims were found to have unity by the International Searching Authority, the U.S. Patent and Trademark Office cannot not now require a restriction. Requiring a restriction would run afoul of Article 27. Accordingly, Applicants request that the claims of Groups I-XV be rejoined and examined as one group.

PCT Rule 13.1 sets for the requirements for unity of invention, stating that the application "shall relate to one invention only or to a group of inventions so linked as to form a single invention concept". PCT Rule 13.2 states that unity requirement is met when there is a technical relationship between the groups involving one or more of the same or Applicants respectfully submit that all of the claims of the present invention form one single invention concept and share a technical relationship, that of α10. The claims of the present invention are all directed to isolated polypeptides and polynucleotides of α10, methods of making the polypeptides of α10, binding entities of α10 and recombinant or isolated intergrin heterodimers comprising α10/

Further, Applicants assert that the subject matter of claims 1-134 is closely related, and thus it would not be a serious burden on the Examiner to examine the

complete subject matter of the claims together. The claims of the present invention are all directed to the same subject matter, *i.e.* α10. Additionally, the following groups of claims are especially closely related. Groups I-IV relate to the integrin α10 as an amino acid sequence and nucleotide sequence with full length sequence as well as the α10 lacking the splice region and method for making them. Groups I, III, V and VII relate to the full length sequence of α10, methods for making it, binding entities, the heterodimer of the full length sequence and the binding entities to the heterodimer. Groups II, IV, VI and VIII relate to the α10 lacking the splice region, methods for making it, binding entities, the heterodimer of the α10 lacking the splice region and the binding entities to the heterodimer In light of the close relationship between the subject matter of the fifteen groups of claims, it is believed that a complete search for the subject matter disclosed in all the claims would overlap.

Thus, it would not be a serious burden on the Examiner to examine all the matter disclosed in the claims at this time. Therefore, withdrawal of the restriction requirement and rejoinder of the claims of Groups I-XV, and further and favorable consideration of all the claims of record on the merits is respectfully requested.

CONCLUSION

Applicant submits that the present application is fully in condition for examination. An early examination on the merits is earnestly solicited.

In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that the prosecution of this application may be expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: _____
Deborah H. Yellin
Registration No. 45,904

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: June 24, 2002

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

31. (Twice Amended) A method [An *in vitro* process] of using an integrin subunit α10 *in vitro* comprising using the amino acid sequence shown in SEQ ID No. 2, SEQ ID No. 4, or an integrin heterodimer comprising said subunit α10 and a subunit β, or a homologue or fragment of said integrin or subunit having essentially the same biologically activity, as a marker or target molecule of cells or tissues expressing said integrin subunit α10, wherein the [which] cells or tissues are of animal including human origin.

32. (Amended) The method of [An *in vitro* process according to] claim 31, whereby said fragment is a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain, and the spliced domain.

33. (Twice Amended) The method of [An *in vitro* process according to] claim 31, whereby said fragment is a peptide comprising the amino acid sequence SEQ ID NO: 7.

34. (Twice Amended) The method of [An *in vitro* process according to] claim 31, whereby said fragment comprises the amino acid sequence from about amino acid no. 952 to about amino acid no. 986 of No. of SEQ ID NO: 2.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

35. (Twice Amended) The method of [An *in vitro* process according to] claim 31, whereby said fragment comprises the amino acid sequence from about amino acid no. 140 to about amino acid no. 337 of SEQ ID No. 1.

36. (Amended) The method of [An *in vitro* process according to] claim 31, whereby the subunit β is β1.

37. (Amended) The method of [An *in vitro* process according to] claim 31, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts and fibroblasts.

38. (Twice Amended) The method of [An *in vitro* process according to] claim 31, which process issued during pathological conditions involving said subunit α10.

39. (Amended) The method of [An *in vitro* process according to] claim 38, which pathological conditions comprise damage of cartilage.

40. (Amended) The method of [An *in vitro* process according to] claim 38, which pathological conditions comprise trauma, rheumatoid arthritis and osteoarthritis.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

41. (Twice Amended) The method of [An *in vitro* process according to] claim 31, which is a process for detecting the formation of cartilage during embryonal development.

42. (Twice Amended) The method of [An *in vitro* process according to] claim 31, which is a process for detecting physiological or therapeutic reparation of cartilage.

43. (Twice Amended) The method of [An *in vitro* process according to] claim 31, which is a process for selection and analysis, or for sorting, isolating, or purification of chondrocytes.

44. (Twice Amended) The method of [An *in vitro* process according to] claim 31, which is a process for detecting regeneration of cartilage or chondrocytes during transplantation of cartilage or chondrocytes.

45. (Twice Amended) The method of [An *in vitro* process according to] claim 31, which is a process for in vitro studies of differentiation of chondrocytes.

46. (Twice Amended) A method [An *in vitro* process] of using binding entities having the capability of binding specifically to an integrin subunit α10 *in vitro*, comprising using an amino acid sequence shown in SEQ ID NO: 2 or SEQ ID NO: 4,

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

or an integrin heterodimer comprising said subunit α10 and a subunit or to homologues or fragments thereof having essentially the same biological activity, as markers or target molecules of cells or tissues expressing said integrin subunit α10, wherein the [which] cells or tissues are of animal including human origin.

47. (Amended) The method of [An *in vitro* process according to] claim 46, whereby said fragment is a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain and the spliced domain.

48. (Twice Amended) The method of [An *in vitro* process according to] claim 46, whereby said fragment is a peptide comprising the amino acid sequence SEQ ID NO: 7.

49. (Twice Amended) The method of [An *in vitro* process according to] claim 46, were said fragment comprises the amino acid sequence from about amino acid no. 952 to about amino acid no. 986 of SEQ ID NO: 2.

50. (Twice Amended) The method of [An *in vitro* process according to] claim 46, whereby said fragment comprises the amino acid sequence from about amino acid no. 140 to about amino acid No. 337 of SEQ ID No. 2.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

51. (Amended) The method of [An *in vitro* process according to] claim 46, whereby the subunit βis β1.

52. (Three Times Amended) The method of claim 46 [An *in vitro* process according to any one of claims 46-51], comprising [which is a process for] detecting the presence of an integrin subunit α10 comprising the amino acid sequence shown in SEQ ID NO: 2 or SEQ ID NO: 4 or of an integrin heterodimer comprising said subunit α10 and a subunit β, or of homologues or fragments thereof having essentially the same biological activity.

53. (Twice Amended) The method of [An *in vitro* process according to] claim 46, which process is a process for determining the differentiation-state of cells during embryonic development, angiogenesis, or development of cancer.

54. (Twice Amended) A method [An *in vitro* process] for detecting the presence of a integrin subunit α10, or of a homologue or fragment of said integrin subunit having essentially the same biological activity, on cells, comprising using a[whereby a] polynucleotide or oligonucleotide chosen from the group comprising a polynucleotide or oligonucleotide shown in SEQ ID NO: 2 [is used] as a marker under hybridisation conditions wherein said polynucleotide or oligonucleotide fails to hybridise to a DNA or RNA encoding an integrin subunit α1.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

55. (Amended) The method of [An *in vitro* process according to] claim 54, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts and fibroblasts.

56. (Amended) The method of [An *in vitro* process according to] claim 54, whereby said fragment is a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain and the spliced domain.

57. (Twice Amended) The method of [An *in vitro* process according to] claim 54, whereby said fragment peptide comprising the amino acid sequence SEQ ID NO: 7.

58. (Twice Amended) The method of [An *in vitro* process according to] claim 54, whereby said fragment comprises the amino acid sequence from about amino acid No. 952 to about amino acid no. 986 of SEQ. ID NO: 2.

59. (Amended) The method of [An *in vitro* process according to] claim 54, whereby said fragment comprises the amino acid sequence from about amino acid No. 140 to about amino acid No. 337 of SEQ ID NO: 1.

60. (Twice Amended) The method of [An *in vitro* process according to] claim 54, which is a process for determining the differentiation-state of cells during

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

development, in pathological conditions, in tissue regeneration, or in therapeutic and physiological reparation of cartilage.

61. (Amended) The method of [An *in vitro* process according to] claim 60, wherein the pathological conditions are any pathological conditions involving the integrin subunit α10.

62. (Amended) The method of [An *in vitro* process according to] claim 61, whereby said pathological conditions are rheumatoid arthritis, osteoarthrosis or cancer.

63. (Amended) The method of [An *in vitro* process according to] claim 60, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts and fibroblasts.

64. (Twice Amended) A method of [An *in vitro* process for] determining the differentiation-state of cells during development *in vitro*, in pathological conditions, in tissue regeneration and in therapeutic and physiological reparation of cartilage, [comprising using whereby] a polynucleotide or oligonucleotide chosen from the nucleotide sequence shown in SEQ ID NO: 2 [is used] as a marker under

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

hybridisation conditions wherein said polynucleotide or oligonucleotide fails to hybridise to a DNA or RNA encoding an integrin subunit α10.

65. (Amended) The method of [An *in vitro* process according to] claim 64, whereby said polynucleotide or oligonucleotide is a polynucleotide or oligonucleotide coding for a peptide chosen form the group comprising peptides of the cytoplasmic domain, the I-domain and the spliced domain.

66. (Twice Amended) The method of [An *in vitro* process according to] claim 65, whereby said polynucleotide or oligonucleotide is a polynucleotide or oligonucleotide coding for a peptide comprising the amino acid sequence SEQ ID NO: 7.

67. (Twice Amended) The method of [An *in vitro* process according to] claim 65, whereby said peptide comprises the amino acid sequence from about amino acid no. 952 to about amino acid no. 986 of SEQ ID No. 2.

68. (Twice Amended) The method of [An *in vitro* process according to] claim 65, whereby said peptide comprises the amino acid sequence from about amino acid no. 140 to about amino acid no. 337 of SEQ ID No. 2.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

69. (Amended) The method of [An *in vitro* process according to] claim 65, whereby said pathological conditions are any pathological conditions involving the integrin subunit α10.

70. (Amended) The method of [An *in vitro* process according to] claim 69, whereby said pathological conditions are rheumatoid arthritis, osteoarthrosis or cancer.

71. (Amended) The method of [An *in vitro* process according to] claim 69, whereby said pathological conditions are atherosclerosis or inflammation.

72. (Twice Amended) The method of [An *in vitro* process according to] claim 64, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts and fibroblasts.

77. (Amended) A method of using [In vitro use of] the integrin subunit α10 as a marker or target in transplantation of cartilage or chondrocytes *in vitro*.

78. (Twice Amended) A method [An *in vitro* method] of using binding entities having the capability of binding specifically to an integrin subunit α10 *in vitro* comprising binding the amino acid sequence shown in SEQ ID NO: 2 or SEQ ID

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

NO: 4, or an integrin heterodimer comprising said subunit α10 and a subunit β or to homologues or fragments thereof having essentially the same biological activity, for promoting adhesion of chondrocytes and/or osteoblasts to surfaces of implants to stimulate osseointegration.

79. (Amended) A method of [*in vitro]* detecting the presence of integrin binding entities *in vitro*, comprising interacting [interaction of] an integrin heterodimer comprising a subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit having essentially the same biological activity, with a sample, thereby causing said integrin, subunit α10, or homologue or fragment thereof, to modulate the binding to its natural ligand or other proteins present in said sample.

80. (Amended) A method of [*in vitro*] studying consequences of the interaction of a human heterodimer integrin *in vitro*, comprising interacting a subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit having essentially the same biological activity, with an integrin binding entity and thereby initiating [initiate] a cellular reaction.

81. (Amended) The [A] method of [according to] claim 80, whereby the consequences of said interactions are measured as alterations in cellular functions.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

82. (Amended) A [An *in vitro]* method of using DNA or RNA *in vitro*, comprising encoding an integrin subunit α10 or homologues or fragments thereof as a target molecule.

83. (Amended) The method of [An *in vitro* method according to] claim 82, whereby a polynucleotide or oligonucleotide hybridises to the DNA or RNA encoding an integrin subunit α10, or homologues or fragments thereof having essentially the same biological activity, and whereby said polynucleotide or oligonucleotide fails to hybridise to DNA or RNA encoding an integrin subunit α1.

84. (Amended) A [An *in vitro]* method of using a human heterodimer integrin *in vitro*, comprising using a subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit, or a DNA or RNA encoding an integrin subunit α10 or homologues or fragments thereof, as a marker or target molecule during angiogenesis.

86. (Twice Amended) A method [process] of using a collagen binding integrin subunit α10 comprising using the amino acid sequence shown in SEQ ID NO: 2 or SEQ ID NO: 4, or an integrin heterodimer comprising said subunit α10 and a subunit β, or a homologue or fragment of said integrin or subunit having essentially the same biologically activity, as a marker or target molecule of cells or tissues

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

expressing said integrin subunit α10, which cells or tissues are of animal including human origin.

87. (Amended) The method of [A process according to] claim 86, whereby said fragment is a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain and the spliced domain.

88. (Twice Amended) The method of [A process according to] claim 86, whereby said fragment is a peptide comprising the amino acid sequence SEQ ID NO: 7.

89. (Twice Amended) The method of [A process according to] claim 86, whereby said fragment comprises the amino acid sequence from about amino acid no. 952 to about amino acid no. 986 of SEQ ID NO: 2.

90. (Twice Amended) The method of [A process according to] claim 86, whereby said fragment comprises the amino acid sequence from about amino acid no. 140 to about amino acid no. 337 of SEQ ID NO: 2.

91. (Amended) The method of [A process according to] claim 86, whereby the subunit β is β1.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

92. (Amended) The method of [A process according to] claim 86, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts and fibroblasts.

93. (Twice Amended) The method of [A process according to] claim 86, wherein the method [which process] is used during pathological conditions involving said subunit α10.

94. (Amended) The method of [A process according to] claim 93, wherein the [which] pathological conditions comprise damage of cartilage.

95. (Amended) The method of [A process according to] claim 93, wherein the [which] pathological conditions comprise trauma, rheumatoid arthritis and osteoarthritis.

96. (Twice Amended) The method of [A process according to] claim 86, [which is a] wherein the method is used [process] for detecting the formation of cartilage during embryonal development.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

97. (Twice Amended) The method of [A process according to] claim 86, [which is a] wherein the method is used in [process] detecting physiological or therapeutic reparation of cartilage.

98. (Twice Amended) The method of [A process according to] claim 86, [which is a] wherein the method is used in [process] detecting regeneration of cartilage or chondrocytes during transplantation of cartilage or chondrocytes.

99. (Twice Amended) A method [process] of using binding entities having the capability of binding specifically to an integrin subunit α10 comprising using the amino acid sequence shown in SEQ ID NO: 2 or SEQ ID NO: 4, or an integrin heterodimer comprising said subunit α10 and a subunit β, or to homologues or fragments thereof having essentially the same activity, as markers or target molecules of cells or tissues expressing said integrin subunit α10, which cells or tissues are of animal including human origin.

100. (Amended) The method of [A process according to] claim 99, whereby said fragment is a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain and the spliced domain.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

101. (Twice Amended) The method of [A process according to] claim 99, whereby said fragment is a peptide comprising the amino acid sequence SEQ ID No. 7.

102. (Twice Amended) The method of [A process according to] claim 99, whereby said fragment comprises the amino acid sequence from about amino acid no. 952 to about amino acid no. 986 of SEQ ID NO: 2.

103. (Twice Amended) The method of [A process according to] claim 99, whereby said fragment comprises the amino acid sequence from about amino acid no. 140 to about amino acid No. 337 of SEQ ID NO: 2.

104. (Amended) The method of [A process according to] claim 99, whereby the subunit β is β1.

105. (Three Time Amended) The method of claim 99, [A process according to any one of claims 99-104 which is a process for] further comprising detecting the presence of an integrin subunit α10 comprising the amino acid sequence shown in SEQ ID NO: 2 or SEQ ID NO: 4, or of an integrin heterodimer comprising said subunit α10 and a subunit β, or of homoloques or fragments thereof having essentially the same biologically activity.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

106. (Twice Amended) The method of [A process according to] claim 99, wherein the method is used [which process is a process] for determining the differentiation-state of cells during embryonic development, angiogenesis, or development of cancer.

107. (Twice Amended) A method of [process for] detecting the presence of an integrin subunit α10, or of a homologue or fragment of said integrin subunit having essentially the same activity, on cells, using [whereby] a polynucleotide or oligonucleotide chosen from the group comprising a polynucleotide or oligonucleotide shown in SEQ ID NO: 2 [is used]as a marker under hybridisation conditions wherein said polynucleotide or oligonucleotide fails to hybridise to a DNA or RNA encoding an integrin subunit α1.

108. (Amended) The method of [A process according to] claim 107, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts and fibroblasts.

109. (Amended) The method of [A process according to] claim 107, whereby said fragment is a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain and the spliced domain.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

110. (Twice Amended) The method of [A process according to] claim 107, whereby said fragment is a peptide comprising the amino acid sequence SEQ ID NO: 7.

111. (Twice Amended) The method of [A process according to] 107, whereby said fragment comprises the amino acid sequence from about amino acid No. 952 to about amino acid no. 986 of SEQ ID No. 2.

112. (Twice Amended) The method of [A process according to] claim 107, whereby said fragment comprises the amino acid sequence from about amino acid No. 140 to about amino acid No. 337 of SEQ ID NO: 2.

113. (Twice Amended) The method of [A process according to] claim 107, wherein the method is used for [which is a process for] determining the differentiation-state of cells during development, in pathological conditions, in tissue regeneration or in therapeutic and physiological reparation of cartilage.

114. (Amended) The method of [A process according to] claim 113, wherein the pathological conditions are any pathological conditions involving the integrin subunit α10.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

115. (Amended) The method of [A process according to] claim 113, whereby said pathological conditions are rheumatoid arthritis, osteoarthrosis or cancer.

116. (Amended) The method of [A process according to] claim 113, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts, and fibroblasts.

117. (Twice Amended) A method of [process for] determining the differentiation-state of cells during development, in pathological conditions, in tissue regeneration and in therapeutic and physiological reparation of cartilage, comprising using [whereby] a polynucleotide or oligonucleotide chosen from the nucleotide sequence shown in SEQ ID No. 2 [used] as a marker under hybridisation conditions wherein said polynucleotide or oligonucleotide fails to hybridise to a DNA or RNA encoding an integrin subunit α10.

118. (Amended) The method of [A process according to] claim 117, whereby said polynucleotide or oligonucleotide is a polynucleotide or oligonucleotide coding for a peptide chosen from the group comprising peptides of the cytoplasmic domain, the I-domain, and the spliced domain.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

119. (Twice Amended) The method of [A process according to] claim 117, whereby said polynucleotide or oligonucleotide is a polynucleotide or oligonucleotide coding for a peptide comprising the amino acid-sequence SEQ ID NO: 7.

120. (Twice Amended) The method of [A process according to] claim 117, whereby said polynucleotide or oligonucleotide is a polynucleotide or oligonucleotide coding for a peptide comprising the amino acid sequence from about amino acid no. 952 to about amino. 986 of SEQ ID No. 2.

121. (Twice Amended) The method of [A process according to] claim 117, whereby said polynucleotide or oligonucleotide is a polynucleotide or oligonucleotide coding for a peptide comprising the amino acid sequence from about amino acid no. 140 to about amino acid no. 337 of SEQ ID No. 2.

122. (Amended) The method of [A process according to] claim 117, whereby said pathological conditions are any pathological conditions involving the integrin subunit α10.

123. (Amended) The method of [A process according to] claim 117, whereby said pathological conditions are rheumatoid arthritis, osteoarthrosis, or cancer.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

124. (Amended) The method of [A process according to] claim 117, whereby said pathological conditions are atherosclerosis or inflammation.

125. (Twice Amended) The method of [A process according to] claim 117, whereby said cells are chosen from the group comprising chondrocytes, smooth muscle cells, endothelial cells, osteoblasts, and fibroblasts.

126. (Amended) The [A method of using an] integrin subunit α10 as defined in claim 1, wherein the integrin subunit α10 is [as] a marker or target in transplantation of cartilage or chondrocytes.

127. (Twice Amended) A method of using binding entities having the capability of binding specifically to an integrin subunit α10 comprising using the amino acid sequence shown in SEQ ID NO: 2 or SEQ ID NO: 4, or an integrin heterodimer comprising said subunit α10 and a subunit β, or to homologues or fragments thereof having essentially the same biological activity, for promoting adhesion of chondrocytes, and/or osteoblasts to surfaces of implants to stimulate osseointegration.

128. (Amended) A method of using [Use of] an integrin heterodimer as a target for anti-adhesive drugs or molecules in tendon, ligament, skeletal muscle, or other

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

tissues, comprising using an integrin subunit α10 and a subunit β, or the subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit α10 having essentially the same biological activity, as a target for anti-adhesive drugs or molecules in tendon, ligament, skeletal muscle, or other tissues where adhesion impairs the function of the tissue.

129. (Amended) A method of stimulating, inhibiting, or blocking the formation of cartilage or bone, comprising administering [administration] to a subject a suitable amount of a pharmaceutical agent or an antibody which is capable of using an integrin heterodimer comprising a subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit α10 having essentially the same biological activity, as a target molecule.

130. (Amended) A method of preventing adhesion between tendon/ligaments and the surrounding tissue after infection, inflammation, and after surgical intervention where adhesion impairs the function of the tissue, comprising administering [administration] to a subject a suitable amount of a pharmaceutical agent or an antibody which is capable of using an integrin heterodimer comprising a subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit α10 having essentially the same biological activity, as a target molecule.

Attachment to Response to Restriction Requirement

Marked-up Claims 31-72, 77-84, and 86-134

131. (Amended) A method of stimulating extracellular matrix synthesis and repair by activation or blockage of an integrin heterodimer comprising using a subunit α10 and a subunit β[,] or of the subunit α10 thereof[,] or of a homologue or fragment of said integrin, or subunit α10 having essentially the same biological activity.

132. (Amended) A [method of using] DNA [or RNA] encoding an integrin subunit α10 or homologues or fragments thereof as a target molecule.

133. (Amended) [A] The method according to claim 132, whereby a polynucleotide or oligonucleotide hybridises to the DNA or RNA encoding an integrin subunit α10 or homologues or fragments thereof and whereby said polynucleotide or oligonucleotide fails to hybridise to a DNA or RNA encoding en integrin subunit α1.

134. (Amended) A method of using a human heterodimer integrin comprising using a subunit α10 and a subunit β, or the subunit α10 thereof, or a homologue or fragment of said integrin or subunit having essentially the same biological activity, or a DNA or RNA encoding an integrin subunit α10 or homologues or fragments thereof, as a marker or target molecule during angiogenesis.